

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION**

IN RE: PELLA CORPORATION)	2:14-mn-00001-DCN
ARCHITECT AND DESIGNER SERIES)	ORDER
WINDOWS MARKETING, SALES)	
PRACTICES AND PRODUCTS)	
LIBAILITY LITIGATION.)	
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This matter is before the court on defendant Pella Corporation’s (“Pella”) motion to exclude the expert testimony of Michael Louis (“Louis”), Daniel Clark (“Clark”), and Andrew Faulkner (“Faulkner,” together with Louis and Clark, the “SGH Experts”) of Simpson, Grumpertz, and Herger (“SGH”). For the reasons set forth below, the court grants Pella’s motion.

I. BACKGROUND

The plaintiffs in this consolidated multi-district litigation are owners of certain Pella Architect Series and Designer Series Windows manufactured between 1997 and 2007 (the “Windows”). Plaintiffs allege that the Windows suffer from a common defect resulting in damage to the Windows and adjoining walls. ECF No. 135, Pls.’ Resp. 8–9. On the basis of these allegations, plaintiffs filed multiple actions in separate jurisdictions, which have been referred to this court for coordinated or consolidated pretrial proceedings. ECF No. 1, MDL Panel Consolidation Order.

Plaintiffs identified the SGH Experts¹ as expert witnesses pursuant to Federal Rule of Evidence 702 and provided a report (the “SGH Report”) detailing the SGH

¹ The SGH Experts each have degrees and experience in engineering. Pls.’ Resp. Ex. 1, Faulkner C.V.; Pls.’ Resp. Ex. 2, Clark C.V.; Pls.’ Resp. Ex. 4, Louis C.V. Louis, who is undisputedly the primary SGH Expert, has extensive experience in the area of waterproofing design. Louis C.V at 1.

Experts' opinions. The SGH Experts opine that the Windows suffer from a defective "water management system" which contains numerous "leakage paths"² that allow water to penetrate into vulnerable areas of the Windows. See ECF No. 38-1 in Case No. 2:14-cv-3307, Dilly Mot. to Certify Class 2. Specifically, the SGH Experts contend that the Windows suffer from: (1) water leakage between the sash and the frame due to insufficient compression of the frame gasket; (2) sealant failure in the sash glazing pocket; and (3) sealant failure in the frame corner. Pls.' Resp. Ex. 1, SGH Report 83. The SGH Experts further opine that the wood treatment used to protect these and other areas of the Windows is insufficient. Id.

The SGH Experts base these opinions on data collected through site inspections, destructive testing, water testing, visits to Pella manufacturing plants, and a review of Pella documents and industry literature. Id. at 2. During their site inspections, the SGH Experts viewed 477 Windows, documented the interior and exterior conditions of 336 Windows, and observed the conditions of the wood sash components outboard of the frame gasket of 252 Windows. Id. at 51, 52; Pls.' Resp. 9. The SGH Experts observed the internal condition of the Windows through destructive testing. SGH Report at 56–66.

The SGH Experts conducted two types of water tests: (1) a "spray rack test," where water was sprayed on the outside of the Windows while a sealed vacuum was placed on the inside of the Windows to simulate wind driven rain; and (2) a "nozzle test," where a narrow stream of water was sprayed onto isolated portions of the Windows. Id. at 52, 53. The SGH Experts conducted spray rack tests on 45 Windows from 13 homes,

² While plaintiffs' frequently use the term "failure paths," the SGH Report uses the term "leakage paths." The court adopts the term "leakage paths," in an effort to avoid confusion.

finding some form of leakage in 67% of the tested Windows, and conducted nozzle tests on 53 Windows from 11 homes, finding some form of leakage in 91% of the tested Windows. Id. at 54.

The SGH Experts also visited a number of Pella manufacturing plants, where they noted inconsistencies in Pella's manufacturing processes, particularly with respect to the wood treatment application process. Id. at 54–55. They also evaluated Pella's compliance with WDMA I.S.-4 (“IS-4”), an industry standard for wood treatment performance published by the Window and Door Manufacturers Association (“WDMA”). Id. at 73–83.

Pella filed the instant motion on December 14, 2015, arguing that the opinions contained in the SGH Report were not admissible under Rule 702 and Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993). ECF No. 129. Plaintiffs filed a response on January 14, 2016, ECF No. 135, and Pella filed a reply on January 29, 2016. ECF No. 142. The court held a hearing on the matter on September 8, 2016. Plaintiffs filed a letter supplementing certain issues discussed at the hearing on September 30, 2016.³ The matter is now ripe for the court's review.

II. STANDARD

Federal Rule of Evidence 702 provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

³ This letter is the subject of Pella's pending motion to strike. ECF No. 164. Pella contends that much of the supplemental material provided in plaintiffs' letter should be disregarded as untimely. Id. The court finds it unnecessary to resolve this question because the court concludes that Pella's motion to exclude should be granted, even if plaintiffs' supplemental material is considered.

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

The proponent of an expert witness's testimony bears the burden of proving that such testimony meets the requirements of Rule 702 by a preponderance of evidence.

Daubert, 509 U.S. at 592 n. 10. District courts serve as gatekeepers for expert testimony, and carry a “special obligation” to ensure that expert testimony is reliable and relevant. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 147 (1999). The court must therefore ensure that an expert’s testimony is based on “scientific knowledge,” and “will assist the trier of fact to understand or determine a fact in issue.” Daubert, 509 U.S. at 592. The first inquiry asks “whether the reasoning or methodology underlying the testimony is scientifically valid.” Id. at 592–93. Several nondispositive factors should be considered in determining the reliability of a particular scientific theory or technique: whether it (1) can be and has been tested; (2) has been subjected to peer review and publication; (3) has a known or potential rate of error; and (4) has attained general acceptance in the pertinent scientific community. See id. at 593–94. These factors are not exclusive; what factors are relevant to the analysis “depend[] upon the particular circumstances of the particular case at issue.” Kumho Tire, 526 U.S. at 150. In conducting the reliability inquiry, the focus “must be solely on principles and methodology, not on the conclusions that they generate.” Id. at 595.

The second inquiry “goes primarily to relevance.” Id. at 591. Relevance is determined by ascertaining whether the testimony is sufficiently tied to the facts of the case such that it will aid the jury in resolving a factual dispute. Id. at 593. “A review of the caselaw after Daubert shows that the rejection of expert testimony is the exception rather than the rule.” Fed. R. Evid. 702, Advisory Committee’s Note to 2000 Amendments. “Daubert did not work a ‘seachange over federal evidence law,’ and ‘the trial court’s role as gatekeeper is not intended to serve as a replacement for the adversary system.’” Id. (quoting United States v. 14.38 Acres of Land Situated in Leflore Cnty., 80 F.3d 1074, 1078 (5th Cir. 1996)).

III. DISCUSSION

Pella advances several arguments against the admission of the SGH Experts’ opinions. First, Pella argues that the SGH Experts’ leakage opinions are based on flawed testing and insufficient data. Def.’s Mot. 14–19, 28–30. Pella also challenges the SGH Experts’ qualifications to opine on the sufficiency of the Windows’ wood treatments, and again argues that the methodology underlying such opinions does not support the SGH Experts’ conclusions. Id. at 24–25, 31. Finally, Pella argues that the SGH Experts’ opinions should be excluded because they engaged in the spoliation of evidence. Id. at 31. The court finds that the instant motion can be resolved on the basis of the SGH Experts’ methodology and qualifications, and therefore, declines to address the spoliation issue.

A. Testing Procedures

Pella argues that the SGH Experts’ opinions are unreliable because the SGH Experts did not look into potential alternative causes of the Windows’ damage—such as

installation errors, construction defects, or condensation—and based their opinions on flawed testing. Id. at 15–17. Plaintiffs argue that the SGH Experts’ investigation and testing were conducted in accordance with the American Society for Testing and Materials (“ASTM”) standard for “[e]valuating [w]ater [l]eakage of [b]uilding [w]alls,” Standard E2128 (“ASTM E2128”), and that compliance with this standard evinces their reliability. Pls.’ Resp. 22–23.

A failure to consider potential alternative causes may render an expert’s testimony inadmissible. See Westberry v. Gislaved Gummi AB, 178 F.3d 257, 265 (4th Cir. 1999) (requiring expert to provide some explanation for discounting a proposed alternative cause). However, an expert need not “rule out every potential cause.” In re Fosamax Prod. Liab. Litig., 647 F. Supp. 2d 265, 278 (S.D.N.Y. 2009) (quoting Israel v. Spring Indus., 2006 WL 3196956, at *5 (E.D.N.Y. Nov. 3, 2006)). Daubert simply requires that an expert “address obvious alternative causes and provide a reasonable explanation for dismissing specific alternate factors identified by the defendant.” Id. (quoting Israel, 2006 WL 3196956, at *5). If an expert meets this threshold, then the failure to investigate potential alternative causes simply affects the weight of the evidence. Westberry, 178 F.3d at 265 (“The alternative causes suggested by a defendant ‘affect the weight that the jury should give the expert’s testimony and not the admissibility of that testimony,’ unless the expert can offer ‘no explanation for why she has concluded [an alternative cause offered by the opposing party] was not the sole cause.’” (quoting Heller v. Shaw Indus., Inc., 167 F.3d 146, 156–57 (3d Cir. 1999)).

Here, there is some evidence in the record suggesting the SGH Experts wholly ignored possible alternative causes and began their investigation assuming that the

Windows leaked. See Pls.’ Resp. Ex. 3, Louis Dep. 176:16–19 (stating that SGH was not hired to evaluate “issues outside of the window itself”). Plaintiffs claim that the SGH Experts focused their investigation on a defect-related leakage theory only after conducting preliminary visual inspections, which revealed stains and other wood deterioration associated with leakage. Id. at 151:15–19 (explaining that “whenever we’ve seen that damage, the staining and damage on the windows, we’ve always associated that with leakage”). But Louis admits that leakage is not the only possible cause of wood staining and it is impossible to determine the cause of wood staining simply by viewing the stain itself. Id. at 151:21–152:2, 154:14–16. Thus, it is questionable whether the SGH Experts’ observations of wood staining provide a “reasonable explanation for dismissing” alternative causal factors. In re Fosamax, 647 F. Supp. 2d at 278 (quoting Israel, 2006 WL 3196956, at *5). One might argue that the SGH Experts’ failure to directly investigate such alternatives is enough to preclude their testimony, regardless of whether the water testing was flawed. However, given Louis’s knowledge and experience in the area of window leakage and design, the court will assume, without deciding, that the observed wood stains provide at least a reasonable justification for the SGH Experts’ decision to focus their investigation on possible defect-related leakage.

But even this rather generous assumption does not put the issue of alternative causes to rest. The court must consider the SGH Experts’ treatment of alternative causes in their investigation as a whole. Kumho Tire, 526 U.S. at 150 (recognizing that Daubert’s “gatekeeping inquiry must be ‘tied to the facts’ of a particular ‘case’” (quoting Daubert, 509 U.S. at 591)). Because it is impossible to determine the specific cause of wood staining by simply viewing the stain itself, Louis Dep. 151:21–152:2, 154:14–16,

the SGH Experts must rely on more than visual observations to support their conclusion that defect-related leakage, and not some other mechanism, such as improper installation or construction defects, caused the observed wood staining and deterioration. The SGH Experts offer the water tests as additional support for their leakage theory, explaining that these tests were designed to “recreate observed water stains and trace leakage paths reported by the homeowners.” SGH Report 52. Of course, simply “recreating” the staining, without more—i.e. showing it is theoretically possible to expose the damaged portions of the Windows to water through the alleged “leakage paths”—does very little to elevate the SGH Experts’ defect-theory above other potential causes. It is not enough under Daubert to show that leakage is a possible cause of the Windows’ damage, the SGH Experts must justify their conclusion that it is the most probable cause. This demands a showing of probability, not possibility.

ASTM E2128 solves this problem by placing certain constraints on the investigative testing protocol in an attempt to identify the actual cause of the leakage or other water infiltration. The standard contemplates investigative testing as a means of “verify[ing] and extend[ing] a hypothesis arrived at during the document review and inspection phases.” ASTM E2128 § 10.1. The “primary purpose” of this testing “is to recreate leaks that are known to occur,” and compare these recreations to evidence of the actual leaks, such as wood staining. Id. § 10.1.1.3. But the standard makes it clear that these recreations “should simulate the actual conditions under which leakage has been observed.” Id. § 10.2.1. “Testing at an environmental exposure level that the building has never experienced and has little likelihood of experiencing may lead to incorrect conclusions.” Id. § 10.2.2. These constraints strengthen the inferences that can be drawn

from these recreations by tying them to the facts of the case. Showing that the Windows will leak under a given set of conditions undeniably provides some support for the assertion that the Windows leaked in a particular case, but the more the tested conditions differ from the conditions the Windows actually experienced, the more likely it is that the testing does not replicate the Windows' actual performance. On the other hand, the more the tested conditions "simulate the actual conditions under which leakage has been observed," id. § 10.2.1, the more confident one can be that the results are representative of the Windows' actual performance. Put simply, to the extent the SGH Experts' testing failed to recreate actual conditions, it failed to examine whether the Windows possess the propensity to leak under the facts of this case. Thus, the constraints imposed by ASTM E2128 are necessary to reduce the analytical gap between the SGH Experts' testing and their conclusions. See Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997) ("[N]othing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.").

Pella argues that the air pressures used in the spray rack tests and the volume of water used in the nozzle tests subjected the Windows' to unrealistic conditions. Def.'s Mot. 3–6. Plaintiffs contend that the testing protocols they utilized are permitted under ASTM E2128. Pls.' Resp. 23–24. Regardless of whether plaintiffs' contention is true, it is deceptive. ASTM E2128 is a general standard that outlines a systematic approach to investigating the cause of wall leaks and the principles that should guide that investigation. ASTM E2128 § 5.1. The standard is not exclusively used to diagnose

leakage in windows; it is broad enough to apply to any leakage in an “exterior wall,” which it defines as “a system [that includes] its exterior and interior finishes, fenestration, structural components and components for maintaining the building interior environment.” Id. § 1.1. Unsurprisingly then, ASTM E2128 does not outline precise instructions that can be mechanically applied in all investigations, but instead relies on the investigator to exercise judgment in tailoring the investigation to the case. Id. § 4.1.2 (recognizing that “all activities may not be applicable . . . for a particular evaluation program”); Id. § 10.2.8 (recognizing that “[d]iagnostic testing can [] be adapted from in-service quality assurance testing procedures such as [ASTM] E1105”). Thus, the fact that the SGH Experts did not deviate from the wide range of testing protocols available under ASTM E2128 is unremarkable. The more important inquiry is whether the SGH Experts’ methodology complied with the standard’s general directives—particularly, the directive to conduct investigative testing under conditions that the product is likely to have actually experienced. ASTM E2128 §§ 10.2.1, 10.2.2.

1. Spray Rack Testing

The SGH Experts’ spray rack tests applied 5 gallons of water per square foot per hour to the outside of the Windows in accordance with a separate standard, ASTM E1105, and applied air pressure of up to 100% of the Windows’ “standard test pressure”—a magnitude of air pressure derived from the manufacturer’s performance rating.⁴ ASTM E1105 sets out the general procedures for conducting spray rack testing. Def.’s Mot. Ex. 5, ASTM E1105 § 1.2. Although ASTM E1105 is a “quality assurance”

⁴ A window’s standard test pressure is generally used to evaluate the window’s resistance to water infiltration in a laboratory setting. Def.’s Mot. Ex. 9, AAMA 502-11 § 5.3.2 n. 5.

test, used for evaluating compliance with specific performance standards rather than actual performance, ASTM E2128 provides for the use of ASTM E1105 testing in a diagnostic setting, but explicitly requires that such testing be “adapted” for diagnostic purposes.⁵ ASTM E2128 § 10.2.7. As discussed above, diagnostic testing must account for the actual conditions the product experienced. See ASTM E1105 § 10.2.1.

Pella argues that the SGH Experts’ use of the Windows’ standard test pressure was inappropriate, given the spray rack tests’ diagnostic purpose. Def.’s Mot. 4–5. The SGH Experts conducted the spray rack tests at zero pressure, one-third of the Windows’ standard test pressure, two-thirds of the standard test pressure, and the full standard test pressure. SGH Report 52–53. ASTM E1105 does not explicitly provide any guidance on the appropriate air pressure to apply, but a separate organization, the American Architectural Manufacturing Association (“AAMA”), has developed several standards which provide guidelines on the specific application of ASTM E1105 in various contexts. See Def.’s Mot. Exs. 6–9. Pella highlights two of these standards, AAMA 502⁶ and AAMA 511, to argue that the SGH Experts’ use of the Windows’ standard test pressure was unreliable. The SGH Experts’ spray rack testing protocols are most analogous to AAMA 502, which calls for the use of the same standard test pressure scale applied in this case. See Clark Dep. 8:6–20 (acknowledging that the two-thirds standard test pressure is found in AAMA 502). AAMA 502 was designed to verify performance of newly installed products, AAMA 502 § 1.1, while AAMA 511 was designed specifically

⁵ ASTM E2128 references both “investigative” and “diagnostic” testing, but explains that “investigative testing is a diagnostic procedure.” ASTM E2128 § 10.2.2.

⁶ A prior version of ASTM E2128 provided that the testing methods of AAMA 502 could be adapted for diagnostic purposes, but the current version references AAMA 511 instead. Compare ASTM E2128 § 10.2.7 with Pls.’ Resp. Ex. 7, ASTM E2128 (2001 version) § 10.2.7.

to guide professionals in adapting existing testing standards for diagnostic purposes under ASTM E2128. AAMA 511 § 2.1. Thus, AAMA 511 is clearly the more reliable standard to apply in this case.⁷ The SGH Experts, however, did not even begin to apply AAMA 511. While the SGH Experts utilized the standard test pressure scale derived from the Windows' "minimum design pressure," SGH Report 52, AAMA 511 requires the use of test pressures calculated using a formula that approximates the pressure experienced during actual precipitation events. AAMA 511 § 4.2.1.1.

Though AAMA 502 is not directly applicable, it also suggests that the SGH Experts' use of the full standard test pressure was flawed. AAMA 502 uses the same standard test pressure scale, but § 5.3.2 specifically states that field testing conducted in accordance with ASTM E1105 should use a two-thirds standard pressure test, and explains that this one-third reduction is necessary to account for differences in the laboratory and field environment. Of course, AAMA 502 is only applicable to "newly installed" products—i.e., those tested "no later than six months after installation." AAMA 502 § 1.1. If the full standard pressure test is inappropriate for use on windows immediately after installation, it is certainly inappropriate for use on the plaintiffs' Windows, which have been installed for years.

Plaintiffs argue the SGH Experts did not follow either AAMA 511 or 502, but instead followed ASTM E2128 and ASTM E1105. Pls.' Resp. 24, 27. However, as noted above, neither ASTM E2128 nor ASTM E1105 specifies the appropriate test pressure. While ASTM E2128 does recognize that a tester's professional judgment plays some role in designing the appropriate test, see ASTM E2128 §§ 4.1.2, 4.1.3.9, the court

⁷ AAMA 502 explicitly states that the proper AAMA standard for diagnostic purposes is AAMA 511. AAMA 502 § 1.1.

cannot allow plaintiffs to rely on ASTM E2128 to establish the reliability of their methodology while simultaneously allowing every testing decision to escape scrutiny under the cloak of “professional judgment.” If ASTM E2128 were interpreted in this way, it would be so vague as to provide no guidance at all. Here, it is indisputable that the SGH Experts simply ignored AAMA 511, a standard which is specifically referenced by ASTM E2128 § 10.2.7 and clearly applicable. Even if the court were to set AAMA 511 aside and consider only the language of ASTM E2128, it cannot square the SGH Experts’ test design with § 10.2.1’s directive to “simulate the actual conditions under which leakage has been observed.” Id. § 10.2.1. The SGH Experts used the same 4 test pressures to test Windows in 11 different homes. SGH Report 52–53. These test pressures were derived from manufacturer performance standards, id. at 52, and there is no evidence they were tailored to any actual weather conditions.⁸ See Def.’s Mot. Ex. 4, Clark Dep. 108:15–17 (“With 1105 and AAMA, you’re not trying to replicate weather events. You’re trying to identify leakage pathways . . .”). Thus, the court concludes

⁸ At the hearing, plaintiffs defended a comment in their briefing that “SGH never tested at an environmental exposure level that the windows would never experience,” by arguing that the standard test pressures did not exceed “the original rating for the window which would have been set upon to meet a requirement in that local building code for that local climate.” Hr’g Tr. 75:23–76:2. First, the court is somewhat confused by this argument. One would think that a local building code would be designed to require a performance rating that ensured performance in conditions more severe than the actual weather conditions the area was likely to experience. Thus, testing conditions based on a code-required performance rating would seem likely to exceed the actual conditions the Windows experienced. In any event, the court is convinced that ASTM E2128 does not permit the use of testing conditions that are based on performance standards that lack sufficient connection to the area’s actual weather conditions. ASTM E2128 § 7.3 recognizes the distinction between “performance criteria” and “actual exposure conditions,” and § 10.1.1.1 explicitly states that “[i]nvestigative testing is not intended to demonstrate code compliance.”

that the SGH Experts conducted their spray rack tests in a manner that was inconsistent with the general purposes underlying ASTM E2128.

2. Nozzle Testing

Pella also takes issue with the SGH Experts' nozzle tests.⁹ Def.'s Mot. 19–21.

These tests delivered an isolated stream of water to various parts of the Windows at between ≤ 1 and 2 psi. Id. The tests directed water at the Windows' jambs, moving up the Window at a rate of 1 ft/min, until reaching the top or until water penetration was noted. Id. The tests also sprayed water at the lowest pressure setting, ≤ 1 psi, directly onto intentionally designed gaps in the sash rain strip¹⁰ “for several minutes, or until [they] observed water on the interior face of the sash.” Id.

This process appears to contain many of the same flaws presented by the spray rack tests. Though the SGH Report references AAMA 501.2 in describing the nozzle test, SGH Report 53, plaintiffs insist that they did not follow AAMA 501.2, but instead conducted a “forensic garden hose spray nozzle test under ASTM E2128.” Hr’g Tr. 76:18–25. This characterization does not help plaintiffs’ case. Plaintiffs’ overarching argument is that the SGH Experts’ opinions are reliable because they are based on industry standard testing. Pls.’ Resp. 22–23. By distinguishing the nozzle tests from

⁹ In addressing the nozzle tests, Pella returns to the argument that the SGH Experts’ testing was unreliable because it was premised on the assumption that the Windows leaked and simply sought to recreate those leaks, without considering other possible causes. Again, the court does not wish to convey the impression that an expert is always required to directly investigate possible alternative causes. A test that simply “recreates” leaks using a particular mechanism may well be sufficient, but there needs to be some reason to think that the test provides an accurate representation of actual events. The question is one of execution, not overall approach.

¹⁰ The sash rain strip is a narrow strip of material between the sash and the frame, outboard of the frame gasket, which also serves to prevent water penetration. Unlike the frame gasket, the rain strip has gaps at the corners to allow drainage of any water that gets past the strip.

AAMA 501.2, plaintiffs preclude themselves from invoking that standard as evidence of reliability. To the extent plaintiffs attempt to invoke ASTM E2128, their efforts are unavailing for many of the same reasons discussed in the preceding section. First, plaintiffs do not believe ASTM E2128 imposes any real constraints on the testing methodology, but describe ASTM E2128 as a “guide” that “does not control what [testing] procedures are used.” Hr’g Tr. 64:12–15. If true, this is precisely why plaintiffs cannot use ASTM E2128 to justify the SGH Experts’ nozzle testing under Daubert. Plaintiffs seek to invoke ASTM E2128 to demonstrate the SGH Experts’ methodological reliability, but then argue that their methodology should not be scrutinized because ASTM E2128 leaves the bulk of testing design to the expert’s discretion. This leaves the court without any means of evaluating the reliability of the SGH Experts’ nozzle tests. The court cannot permit the plaintiffs to invoke ASTM E2128 as both a sword and a shield. Doing so would constitute an abdication of the court’s gatekeeping duty under Daubert.

In any event, the court is not convinced by plaintiffs’ hollow reading of ASTM E2128. As outlined above, the standard provides plenty of guidance on how an expert should conduct diagnostic testing, even if it does not spell out the specific details of the test. While ASTM E2128 recognizes that nozzle tests can be used to “isolate a leakage path or water entry path,” ASTM E2128-12 § X3.7.2, it also provides that “[t]o the extent practicable,” diagnostic testing should “simulate the actual conditions under which leakage has been observed.” Id. § 10.2.1. Because the SGH Experts used the nozzle tests for diagnostic purposes, they were bound to comply with § 10.2.1.

Plaintiffs have not explained what considerations went into the SGH Experts' design of the nozzle test, specifically the rate and duration of water they applied to the Windows. The SGH Experts did reduce the water pressure from the AAMA 501.2 standard range of 30 to 35 psi—which is designed for use on permanently sealed structures, rather than operable windows—to between ≤ 1 and 2 psi. SGH Report 53. This reduced pressure translates to around 22.8 gal./hr., Louis Depo. 131:8–132:10; Hr'g Tr. 35:13–14, which is substantially higher than the rate 5 gal./hr./sq. ft. rate used in the spray rack testing.¹¹ While it should be noted that this stream of water was sometimes moved across different parts of the Windows, the SGH Experts did not always use this technique—such as when the water was directed onto the gap in the rain strip “for several minutes, or until [the SGH Experts] observed water on the interior face of the sash.” SGH Report 53.

These techniques reveal the SGH Experts' failure to account for actual weather conditions in conducting the nozzle tests. Spraying water at a rate of nearly 23 gallons per hour directly onto the Windows for any appreciable amount of time appears highly unlikely to provide credible evidence of the Windows' performance under actual conditions.¹² Indeed, the SGH Experts admit that the nozzle test was not designed to

¹¹ For reference, ASTM E1105 explicitly notes that a spray rate of 5 gal./sq. ft./hr. equates to 8 inches of rainfall per hour, which exceeds the “greatest [recorded] rainfall for a 1 hour period” in “the contiguous 48 United States” by 3 inches. ASTM § 6.2.4 n. 3.

¹² To the extent plaintiffs argue that this spray rate was used to recreate the “sheeting effect” of water running down the building walls, the court finds that this argument lacking in credibility given Louis's testimony explaining how the nozzle tests were designed to “generate leakage.” Louis Dep. 147:11–18 (explaining that if spray rack tests failed to recreate observed leakage, “it's just a matter of volume of water getting to the window”); *id.* 150:7–13 (“If out testing does not reproduce the leakage, then we need to do one of two things: Test longer . . . or [] put water into the locations where in the past we have demonstrated . . . leakage has occurred.”).

“replicate weather events.” Clark Dep. 108:15–16. The goal was simply to “identify leakage pathways that correlate with staining and damage that are observed.” Id. at 108:16–19; see also Louis Dep. 147:11–18, 150:7–13. Perhaps this methodology could be justified under some other standard, but it runs counter to the principles underlying ASTM E2128. As explained above, if the observed staining and damage is insufficient to support the conclusion that the Windows are defective, showing that water can be forced into the damaged areas of the Windows under unrealistically extreme conditions adds very little to the analysis. Thus, plaintiffs cannot rely on ASTM E2128 to demonstrate the reliability of their nozzle test procedure.

Plaintiffs claim that one of Pella’s own experts, Pete Cruz (“Cruz”), expressed approval of the SGH Experts’ nozzle tests. Pls.’ Resp. 15–16. This argument may be probative of whether such tests are generally accepted in the field, but it is by no means dispositive. More importantly, a review of the testimony in question reveals that the Cruz’s “approval” is muted, at best. While Cruz did state that AAMA 501.2 nozzle testing can be used to replicate the source of a water leak, he explicitly qualified this answer by stating that “[y]ou have to know what the limitations are, not just use it randomly for the purpose of seeing if it will leak with that nozzle or not.” Pls.’ Resp. Ex. 31, Cruz Depo. 114:1–17. Cruz further explained that

[y]ou have got to take into account the volume of water and the force of impact of that water when you are using it. Just because they drop 1 psi or 2 or 3 psi doesn’t make it right. It was an extensive amount of water. There was a large impact of water directly over the gasket which overwhelmed the ability of that window to resist that water.

Id. at 125:14–20. At most, Cruz appears to accept the premise that nozzle testing might be used to diagnose water leaks when the test is properly calibrated for that purpose, but he clearly does not think that occurred in this case.

The court therefore concludes that the SGH Experts' water testing failed to comply with ASTM E2128, or any other identifiable standard. Consequently, any indicia of reliability associated with ASTM E2128—prior testing, peer review, and general acceptance in the scientific community—cannot be imputed to the SGH Experts' testing. In deviating from ASTM E2128, the SGH Experts also failed to address the analytical gap created by their failure to directly investigate potential alternative causes of the Windows' damage. Because the spray rack tests were not designed to account for real world conditions, they do very little to elevate the SGH Experts' defect-related leakage theory above other potential causes. Indeed, the spray rack tests do very little to support the defect theory at all. One cannot sensibly conclude that the alleged leakage paths caused the observed water damage simply because the SGH Experts demonstrated they could have caused such damage under certain arbitrary and unrealistic conditions. That proposition was never in dispute.¹³ Without some showing that the hypothesized leakage is being "recreated" under conditions that are likely to have actually existed, there is no reason to think that defect-related leakage is anything other than one of many other potential causes of the plaintiffs' damage. The logical connection is just too attenuated. *Joiner*, 522 U.S. at 146.

B. Representative Sampling

Pella next challenges the SGH Experts' use of the spray rack and nozzle tests as a basis for concluding that all Windows are uniformly defective. Pella argues that such a broad conclusion cannot be derived from the SGH Experts' testing because the sample size was too small and biased. Def.'s Mot. 28–31.

¹³ For this reason, the court alternatively concludes that the water testing is simply not relevant.

Plaintiffs primarily argue that Pella has mischaracterized the extent of their investigation, explaining that the SGH Experts' opinions were based on the following:

Investigation of 477 windows, 336 of which were meticulously inventoried in class representative and non-class representative homes;

Water testing of over 100 windows in twenty-two (22) residences in thirteen (13) states;

Laboratory investigation of numerous samples, and observation of laboratory disassembly of 22 samples conducted by Pella's expert;

Review of thousands of documents, including relevant testing data, design drawings, engineering changes, warranty records, and numerous other documents;

Review of relevant building codes, industry standards, wood preservative manufacturer specifications, and other research related to the Windows; and

Review of testimony of nearly twenty (20) Pella witnesses, including its design and manufacturing engineers.

Pls.' Resp. 9. But simply listing the scope of the SGH Experts' efforts fails to address whether the data gained from such efforts can be used to draw conclusions about the entire population of approximately 7.5 million Windows.¹⁴

In evaluating Pella's argument, it is important to consider the SGH Experts' method of proof. By presenting their testing and observations as evidence of a product-wide defect, the SGH Experts are implicitly asserting that this data is representative of the performance of all Windows. The question for this court is whether this assertion is based on reliable methodology. The field of statistics provides the traditional methods for making such an assertion. One important concept in the field of statistics is statistical

¹⁴ Plaintiffs also spend nearly two pages discussing their problems with Pella's own statistical analysis of its returns and allowances data. Whether or not these attacks are warranted, they are clearly irrelevant to the issue at hand—the generalizability of plaintiffs' experts' opinions.

significance, which “assesses the probability that a particular outcome is due to random variation in the study population, that is, is due to chance rather than a true association.” Cook v. Rockwell Int'l Corp., 580 F. Supp. 2d 1071, 1100 (D. Colo. 2006).

Courts have not always imposed rigid statistical requirements on sample-based evidence of this kind.¹⁵ See Kadas v. MCI Systemhouse Corp., 255 F.3d 359, 362 (7th Cir. 2001) (rejecting traditional 5 percent threshold for statistical significance as arbitrary in admitting statistical evidence of intentional discrimination); In re Viagra Prod. Liab. Litig., 572 F. Supp. 2d 1071, 1090 (D. Minn. 2008) (“There is persuasive authority stating that on a Daubert motion involving general-causation evidence in an MDL matter, lack of statistical significance under some circumstances ‘does not detract from the reliability of the study.’” (quoting In re Phenylpropanolamine (PPA) Prods. Liab. Litig., 289 F. Supp. 2d 1230, 1241 (W.D. Wash. 2003))); United States v. Morrow, 374 F. Supp. 2d 51, 68 (D.D.C. 2005) (holding that “even DNA evidence with relatively low statistical significance may be admitted as probative evidence, provided that certain safeguards are afforded”). However, the fact that courts have not imported traditional, academic standards to determine the generalizability of sample-based evidence does not mean that the issue of random variation is irrelevant to the Daubert analysis. See Kadas, 255 F.3d at 363 (7th Cir. 2001) (recognizing that the level of statistical significance required to

¹⁵ The court does not mean to suggest that statistical significance is never required under Daubert. Courts have recognized that opinions based on statistically insignificant studies should be excluded where such studies are not generally accepted in the relevant field. See In re Lipitor (Atorvastatin Calcium) Mktg., Sales Practices & Prod. Liab. Litig., No. 214-mn-2502, 2016 WL 1251828, at *11 (D.S.C. Mar. 30, 2016) (“Plaintiffs have failed to demonstrate that Dr. Singh’s reliance on non-statistically significant “trends” is accepted in his field, that non-statistically significant findings have served as the basis for any epidemiologist’s causation opinion in peer-reviewed literature, or that standards exist for controlling the technique’s operation.”).

present a particular study to the factfinder depends on the context of the study and the case). Daubert itself instructs courts to consider “the known or potential rate of error” in determining whether a particular technique is valid. Daubert, 509 U.S. at 594. Courts have simply recognized that other indicia of reliability may render non-statistically significant evidence admissible. See Viagra Prod. Liab. Litig., 572 F. Supp. at 1081–82 (noting that the studies relied on by the expert “were peer-reviewed, published, contain known rates of error, and result[ed] from generally accepted epidemiologic research,” and that “the data appear not to result from post-litigation research”); see also In re Lipitor, 2016 WL 1251828, at *11 (excluding expert testimony where plaintiffs failed to show that use of non-statistically significant data was generally accepted in the relevant field, supported by peer-reviewed literature, or governed by standards).

Here, plaintiffs have failed to offer such evidence or otherwise explain why it was sound to conclude that the performance of the Windows tested and inspected by the SGH Experts was representative of the entire universe of 7.5 million Windows. Plaintiffs have not shown that this method is generally used to diagnose product-wide design defects in the industry. Nor have they provided any peer-reviewed literature supporting such methodology or identified standards governing when and how this methodology should be applied. Plaintiffs instead argue that the industry standards their experts employed require only a qualitative, not quantitative analysis. Hr’g Tr. 59:3–10. But those standards are used to identify the cause of specific instances of water infiltration. They do not purport to provide generalizable findings. A review of ASTM E2128 emphasizes the site-specific nature of the investigation. See ASTM E2128 § 5.2 (“The objective of this guide is qualitative, purposeful, and intended to address the question of why, how

and to what extent a building leaks.”); id. § 5.3 (stating that “[i]t is not assumed or expected that all locations with similar design, construction and service characteristics will be currently performing in precisely the same manner” and “it is not necessary to establish such in order to reach technically valid conclusions about why and how a building leaks”). Thus, plaintiffs cannot rely on compliance with ASTM E2128 and other, related standards to show that their findings can be reliably applied to all Windows.

Beyond the concerns created by the SGH Experts’ limited sample size, the court is also concerned about possible selection bias in the SGH Experts’ data. Selection bias is the “nonrandom selection of subjects for study.” In re Countrywide Fin. Corp. Mortgage-Backed Sec. Litig., 984 F. Supp. 2d 1021, 1039 (C.D. Cal. 2013) (quoting David H. Kaye and David A. Freedman, Reference Guide on Statistics, in REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 211, 296 (3d ed. 2011)). Where a sample is drawn from a subsection of the overall population that possesses some trait not shared by the remainder of the population, a study of that sample will tend to produce inaccurate results if this subsection-specific trait affects or correlates with the dependent variable in some way. Courts have recognized the need for non-biased, representative sampling in various contexts where experts have attempted to draw generalizable conclusions from limited data. See id. (excluding expert’s opinion as to frequency of underwriting-related violations in all Countrywide securitizations where study included disproportionate number of loans drawn from securitizations at issue in the litigation); Allgood v. Gen. Motors Corp., 2006 WL 2669337, at *11 (S.D. Ind. Sept. 18, 2006) (excluding expert’s assessment of risk associated with environmental contamination which was “meant to assess the risk on plaintiffs’ land in general,” but “was performed by using only a limited

number of the available samples, and those that would tend to magnify greatly the risk calculation”); United States v. Mikos, 2003 WL 22922197, at *4 (N.D. Ill. Dec. 9, 2003) (rejecting expert’s reliance on bullets in the FBI’s “historical database” to show that bullets that are “analytically indistinguishable . . . likely originated from the same manufacturers’ source [] of lead,” where “[t]he samples were not randomly collected according to any scientifically accepted sampling method”).

In this case, there are certainly reasons to be concerned about selection bias. The SGH Experts’ inspections and testing focused almost exclusively on Windows owned by the named plaintiffs in this litigation.¹⁶ All of the named plaintiffs certainly felt that something was wrong with their Windows, and thus, focusing on these allegedly defective Windows would seemingly tend to overstate the incidence of Window problems in the overall population. Moreover, plaintiffs appear to indicate that the water testing focused on Windows that already exhibited signs of damage.¹⁷ ECF No. 163, Pls.’ Supp. Letter 5 n.12 (explaining that the 8.5% of the tested Windows that showed no visible damage any kind were tested for “comparison purposes”). This further suggests that the water testing overstates the likelihood of Window failure in the overall population. Of course, the court cannot determine whether these biases impacted the

¹⁶ The SGH Experts did examine at least one home owned by a non-plaintiff. See Hr’g Tr. 61:19–22.

¹⁷ Plaintiffs state that 64% of the Windows subjected to water testing already exhibited signs of water damage. If one includes all types of damage, that number jumps to 91.5%. Notably, these percentages appear to overstate the frequency of these types of problems within the SGH Experts own data set. The court’s review of the Window inventory spreadsheets reveals that only 57% of the inventoried Windows exhibited signs of water damage and only 68% of such Windows exhibited any type of damage at all. Pls.’ Resp. Ex. 20. In conducting this review, the court used plaintiffs’ criteria for defining “signs of water damage.” Pls.’ Supp. Letter. 2 n. 3.

outcome of the investigation without more information, but it is clear that the Windows used in the investigation were not randomly selected.

The court recognizes that, as a practical matter, it may be impossible to conduct a rigorous statistical analysis of the defect issue presented in this litigation.¹⁸ See Hr'g Tr. 82:8–14 (plaintiff arguing that such a study would be “prohibitively expensive”). But convenience is not a substitute for reliability under Daubert. In re Countrywide, 984 F. Supp. 2d at 1040 (“The [c]ourt cannot countenance the use of this type of convenience sample that is ‘easy to take but may suffer from serious bias.’ (quoting FJC Ref. Guide on Statistics at 285)). The court does not dismiss the possibility that a somewhat informal statistical analysis of the kind presented here could be found reliable if accompanied by a greater showing of reliability—i.e. evidence of acceptance in the industry, peer-reviewed literature, etc. Daubert, 509 U.S. at 591. However, without other indicia of reliability, when an expert attempts to draw conclusions about an entire population from a sample-based analysis, “the sample[] must be chosen using some method that assures the sample[] [is] appropriately representative of the larger entity or population being measured.” Allgood, 2006 WL 2669337, at *11. Plaintiffs have failed to show that this was done here.

C. Wood Treatment Methodology

The SGH Experts also opine that the Windows utilized ineffective wood treatment or ineffective wood treatment application systems. The SGH Experts base this opinion on a variety of evidence drawn from the SGH Experts’ home inspections,

¹⁸ The court notes that the SGH Experts were not required to support their conclusions with sample-based evidence. If there are other methods of proving a design defect, the SGH Experts were free to use them.

observations made during destructive testing, internal Pella documents, and the SGH Experts' inspections of Pella's manufacturing facilities. SGH Report 67–82. According to the SGH Report, 47% of the Windows inventoried during their site inspections displayed some amount of wood discoloration or deterioration. Id. at 67–68. Destructive testing revealed similar problems. Id. at 68–69. The SGH Experts' document review focuses on Pella's performance and quality control testing, identifying evidence of inadequate testing procedures and poor results. Id. at 73–79. Other documents indicate problems in Pella's manufacturing processes, such as a failure to use appropriate wood treatment application methods, drying times, and storage temperatures. Id. 79–82. Pella argues that the SGH Experts have not tied much of this evidence to the class of Windows at issue in this case. Def.'s Mot. 24–25. Though the problems outlined in the SGH Report may affect some Windows, Pella argues that much of the SGH Experts' evidence cannot support their conclusion that all Windows contain ineffective wood treatment. Id.

Ordinarily, Daubert requires the court to focus its inquiry on the “principles and methodology” employed by the expert, not on the conclusions reached.” United States v. Moreland, 437 F.3d 424, 431 (4th Cir. 2006) (quoting Daubert, 509 U.S. at 594–95). However, “[n]othing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the ipse dixit of the expert.” Joiner, 522 U.S. at 137. The court possesses the discretion “to find that there is ‘simply too great an analytical gap between the data and the opinion proffered.’” Pugh v. Louisville Ladder, Inc., 361 F. App'x 448, 454 (4th Cir. 2010) (quoting Joiner, 522 U.S. at 137); see also Bryte ex rel. Bryte v. Am. Household, Inc., 429 F.3d 469, 477–

78 (4th Cir. 2005) (excluding expert testimony where evidence failed to support expert's conclusion).

The court finds that such an "analytical gap" exists in this case. Much of the evidence the SGH Experts rely on to conclude that "the preservative treatments Pella used between 1997 and 2007 on the [Windows] were insufficient for their intended exposure" simply does not support that proposition. SGH Report 84. As an initial matter, the SGH Experts rely on data from their Window inventories showing that 47% of the observed Windows "exhibited wood discoloration outboard of the frame gasket." Id. at 67. For the reasons discussed in part III.B., above, plaintiffs have not shown that this data was gathered from a representative sample of the overall Window population, and thus, it does not provide a reliable basis for the SGH Experts' wood treatment opinion.

The SGH Experts also cite evidence of deficient manufacturing practices that are plainly not relevant to the entire population of Windows. For instance, the SGH Experts note that Pella stored its wood treatment outdoors and argue that this shows that the treatment was "exposed to a temperature range well outside" the manufacturer's recommended range of 50° F to 80° F. Id. at 80. Of course, this critique is inapplicable to any Windows treated with wood treatment that was stored during a period when the outdoor temperature did not escape this range.¹⁹ Similarly, the SGH Experts point out that two of Pella's four wood treatment application methods were not approved by the manufacturer. Id. at 82. But any impact these methods may have had was necessarily

¹⁹ The SGH Experts appear to assume that because the wood treatment was stored outside, it was necessarily exposed to temperatures outside of the 50° F to 80° F. SGH Report 80. The SGH Experts do not explain this assumption, and without more information, the court finds this assumption unwarranted.

limited to the Windows that were manufactured using such methods. The SGH Experts also highlight documentation suggesting that 1% of the lumber used in Pella windows contained sinker stock—a bacterial infection that makes the wood more absorptive and increases the necessary drying time during the wood treatment process—but this problem says nothing about the effectiveness of the Windows constructed using the 99% of lumber that was uninfected. Id.

Similar logical inconsistency plagues the SGH Experts' analysis of Pella's performance and quality control testing. Pella employed a number of tests to measure the depth and concentration of the treatment in the wood. Id. at 78. The SGH Experts explain that Pella was required to attain a concentration level of 700 ppm for one of its wood treatment formulas and ran quality control testing to ensure that no more than 2.25% of samples fell below this threshold. Id. The SGH Experts then cite numerous test results showing failure rates above the 2.25% level. Id. at 30 (noting results showing 3%, 27%, 47%, and 5% failure rates). While these test results may be strong evidence of inadequate manufacturing processes and perhaps rampant manufacturing defects, they do not show that all Windows lacked adequate wood treatment.

Ultimately, the SGH Report does not identify a singular cause of the allegedly ineffective wood treatment, but instead identifies a laundry list of different problems including poor manufacturing methods, use of incompatible chemicals, and use of inadequate materials. Id. at 72–82; see also Louis Dep. 278:3–5 (“[S]omething is wrong there. Do we know exactly what's wrong? I don't know.”). Many of these problems only relate to certain subsets of Windows and are necessarily inadequate to support the SGH Experts' conclusion that all Windows contain ineffective wood treatment. Though

some of the wood treatment problems identified in the SGH Report may logically support this conclusion, see id. at 73–77 (detailing poor performance testing results), the court cannot simply assume that the SGH Experts would reach the same conclusion if only this evidence were considered. Therefore, the court finds that the SGH Experts' wood treatment opinions are not sufficiently connected to the evidence they purport to rely on.

D. Wood Treatment Qualifications

Pella also argues that, even if the SGH Experts' methodology was reliable, their wood treatment opinions should be excluded because they are unqualified to offer such opinions. Def.'s Mot. 21–27. Pella points out that none of the SGH Experts has any degree or training relating to wood treatments or wood science, none of them have published any articles on the subject, and none of them have even conducted the wood treatment tests they discuss in the SGH Report. Id. at 22. Plaintiffs respond that Louis²⁰ is an expert in “the effectiveness of the treatment used in the Windows at issue in this case.” Pls.' Resp. 38. More specifically, plaintiffs contend that Louis's 37 years of experience as an engineer in the field of waterproofing design “have provided more than sufficient expertise in the ability to identify when a wood treatment is failing prematurely.” Id.

Federal Rule of Evidence 702 requires an expert to be qualified “by knowledge, skill, experience, training, or education.” Fed. R. Evid. 702. “[A] witness'[s] qualifications to render an expert opinion are [] liberally judged by Rule 702. Inasmuch

²⁰ Plaintiffs concede “Louis is the lead expert,” and if Louis is not qualified to testify on a particular issue, Clark and Faulkner are also not qualified. Hr'g Tr. 62:20–24 (“MR. LUCEY: Louis is the lead expert, Your Honor. THE COURT: I mean, if in fact I decide to disqualify Louis for one reason or another, in doing that, Clark and Faulkner are out too. MR. LUCEY: I believe that would follow.”).

as the rule uses the disjunctive, a person may qualify to render expert testimony in any one of the five ways listed: knowledge, skill, experience, training, or education.” Kopf v. Skyrn, 993 F.2d 374, 377 (4th Cir. 1993). “Accordingly, a challenge based on lack of qualifications alone must demonstrate that ‘the purported expert [has] neither satisfactory knowledge, skill, experience, training nor education on the issue for which the opinion is proffered.’” SAS Inst., Inc. v. World Programming Ltd., 125 F. Supp. 3d 579, 586 (E.D.N.C. 2015) (quoting Thomas J. Kline, Inc. v. Lorillard, Inc., 878 F.2d 791, 799 (4th Cir. 1989)). “If, again in the disjunctive, the proposed testimony will recount or employ ‘scientific, technical, or other specialized knowledge,’ it is a proper subject.” Kopf, 993 F.2d at 377.

It is well established that “an expert witness may not offer an opinion where the subject matter goes beyond the witness’s area of expertise.” Ruark v. BMW of N. Am., LLC, 2014 WL 351640, at *3 (D. Md. Jan. 30, 2014); see also Redman v. John D. Brush & Co., 111 F.3d 1174, 1179 (4th Cir. 1997) (finding that a “metallurgic engineer,” who was “undoubtedly qualified to testify about the properties and characteristics of metal,” was not qualified to testify about industry standards governing safe manufacturing industry). Courts have held that expertise in a general field of engineering is insufficient to qualify an expert to testify on every specific issue within that field. See Everlight Elecs. Co. v. Nichia Corp., 2014 WL 4707053, at *9 (E.D. Mich. Sept. 22, 2014) (holding that expert’s “expertise in the broad field of chemical engineering does not qualify him to opine and offer testimony in all areas of the chemical engineering field”); Shreve v. Sears, Roebuck & Co., 166 F. Supp. 2d 378, 392 (D. Md. 2001) (“[A]n expert who is a mechanical engineer is not necessarily qualified to testify as an expert on any

issue within the vast field of mechanical engineering.”). Louis’s training and education are in the field of architecture and civil engineering. Louis C.V. Having reviewed the SGH Report’s analysis of Pella’s quality control and performance testing, the court is convinced that Louis’s wood treatment opinions extend beyond the scope of civil engineering and architecture and venture into matters of biology and chemistry. Because Louis attempts to enter an entirely different field of knowledge, plaintiffs must look beyond Louis’s training and education to demonstrate his qualification in the area of wood treatment.

Plaintiffs argue that Louis is an expert in identifying premature wood deterioration based on his 37 years of experience in the field of waterproofing design. Pls.’ Resp. 28. It is undisputed that Louis has extensive experience in this field and the court has little trouble finding that Louis encountered wood deterioration on numerous occasions. Louis C.V. at 1–3. Thus, Louis appears qualified to identify wood deterioration, despite his lack of specific training or education on the subject. If the SGH Experts’ wood treatment opinion was based solely on their observations of wood deterioration, these qualifications might be sufficient.²¹ However, the SGH Expert’s opinions go well beyond their observations of wood deterioration, and discusses Pella’s manufacturing processes and product testing. Id. at 84–85. In fact, much of the SGH Report’s analysis is committed to discussing Pella’s performance and quality control testing. Id. at 73–83.

²¹ In this scenario, the court would still need to evaluate whether “identifying wood deterioration” requires any expertise at all, given Louis’s suggestion that “the common homeowner has [the] experience and knowledge” to evaluate whether a window is rotting. Louis Dep. 56:11–57:22. An expert cannot testify to “matters within the common knowledge and experience of a lay juror.” Ruark, 2014 WL 351640, at *3.

Plaintiffs argue that these opinions are guided by the IS-4 standard, and that Louis is qualified to assess compliance with IS-4 based on his experience with that standard. Hr'g Tr. 77:3–15. As an initial matter, the SGH Report criticizes one set of tests that it explicitly recognizes are not governed by IS-4. SGH Report 76 (noting that Pella's “full unit test” is “not a standard WDMA or AWPA test”). Plaintiffs do not explain why Louis's qualifications as to IS-4 would enable him to opine on this particular set of tests.

In any event, it is not at all clear what experience Louis actually has with IS-4. There is nothing in the record suggesting Louis, or any other SGH Expert, has ever conducted any wood treatment testing, under IS-4 or otherwise. Louis Dep. 59:2–13 (admitting to have never conducted L-joint testing, soil block testing, retention testing, or penetration testing). Though Louis testified that he has read and reviewed IS-4 “many times,”²² id. at 59:14–16, the court cannot discern the extent to which he has utilized IS-4 in any of his prior work. Louis's testimony does not identify any prior professional experience with IS-4, id. at 58:7–10 (“Q: have you ever been retained by any wood treatment company to evaluate wood treatments? A: I did that in this case.”), and Louis's curriculum vitae does not describe his work in sufficient detail to shed any light on the subject. Louis C.V. At the hearing, plaintiffs claimed that Louis had used IS-4 in numerous prior engagements, Hr'g Tr. 77:6–15, but identified only one example, the case of Schussel v. Lincoln Wood Product Inc., 2:14-cv-1788 (D.S.C.). Notably, that case was settled before Louis was ever qualified as an expert, and despite plaintiffs' claim that Louis's testimony “led to the [] settlement,” Louis's qualifications do not appear to have

²² Notably, Faulkner, who was responsible for the initial review of Pella's wood treatment information, Louis Dep. 75:12–18, testified that he was “familiar” with the standards before this case, but could not recall having read them—at least not in their entirety. Def.'s Mot. Ex. 3, Faulkner Dep. 36:15–37:8.

been on the front of the court's mind when it issued the Final Order and Judgment approving settlement. See Case No. 2:14-cv-1788, ECF No. 115.

The court is not convinced that this evidence is enough to establish Louis's specialized knowledge, skill, experience, training or education in the application of IS-4. Radiance Found., Inc. v. Nat'l Ass'n for the Advancement of Colored People, 27 F. Supp. 3d 671, 674 (E.D. Va. 2013) ("[W]here a purported expert witness has neither satisfactory knowledge, skill, experience, training nor education on the issue for which the opinion is proffered, that witness's testimony may be excluded." (quoting SMD Software, Inc. v. EMove, Inc., 945 F. Supp. 2d 628, 639 (E.D.N.C. 2013))). The fact that Louis has reviewed IS-4 "many times" is of little value without greater explanation of how these reviews were used in his prior work.²³ The court finds it significant that plaintiffs have offered only one example of a project in which Louis evaluated a manufacturer's compliance with IS-4, as he does here. Moreover, the value of this lone example is diminished because it arose in a litigation context. See Thomas J. Kline, 878 F.2d at 800 ("Although it would be incorrect to conclude that Gordon's occupation as a professional expert alone requires exclusion of her testimony, it would be absurd to conclude that one can become an expert simply by accumulating experience in testifying."); Pension Comm. of Univ. of Montreal Pension Plan v. Banc of Am. Sec., LLC, 716 F. Supp. 2d 220, 225 (S.D.N.Y. 2010) ("The only category of experience that courts are generally wary of is experience gained as a litigation consultant and expert witness."). On the current record, the quantity Louis's prior experience with IS-4 is

²³ The court assumes Louis's statement that he read and reviewed IS-4 "many times" was in reference to prior professional engagements. If these reviews were part of some sort of training or education, the court would still need to know the general nature of such training or education.

unknown at best, and scarce at worst, while the quality of such experience—to the extent it has been disclosed—must be discounted because it was gained in a litigation context.

Thus, plaintiffs have failed to carry their “burden to establish by a preponderance of the evidence that [Louis] is qualified to testify as an expert” on the application of IS-4.

Norfolk & Portsmouth Belt Line R. Co. v. M/V MARLIN, 2009 WL 3363983, at *7

(E.D. Va. Oct. 9, 2009). When the SGH Report’s discussion of IS-4 is set aside, the court is left with the SGH Experts’ observations of wood deteriorations in the inspected homes.

As noted above in part III.C. and explained in part III.B., this evidence does not provide a reliable basis for concluding that the entire population of Windows is defective.²⁴ But even if it did, the SGH Report places so much emphasis on the IS-4 analysis, see SGH Report 73–83 (discussing application of IS-4), that the SGH Experts’ wood treatment opinion would still require exclusion because the court cannot determine whether the

²⁴ The court notes that there are reliability concerns that go beyond the sampling problem discussed in part III.B. The SGH Experts’ use their observations of wood deterioration in conjunction with their assertion that any observation of wood deterioration prior to the Window’s expected lifespan is attributable to a defect in the wood treatment or the wood treatment application process. Louis Dep. 60:12–19 (explaining that he evaluated wood treatment effectiveness “based on whether [he] [saw] rot in individual windows). However, it is difficult to verify the reliability of this theory. Plaintiffs reference the biological and chemical properties of wood treatment in their brief, see Pls.’ Resp. 36 (“[W]ood treatment . . . inhibits microbial growth), but as discussed above, plaintiffs have not shown that the SGH Experts are qualified as experts in these areas. Plaintiffs also reference the testimony of Pella’s expert, Greg Gerdes, to support this theory. However, Gerdes testimony appears more focused on the effect of the wood finish, and simply states that a failure to apply the finish will result in staining, but not actual deterioration if the wood treatment is acting properly. Pls.’ Resp. Ex. 18, Gerdes Dep. 77:23–78:5. Plaintiffs also reference reports from Clemson University on the issue, Hr’g Tr. 79:20–25, but the court has been unable to find these reports or any discussion thereof in Louis’s testimony. Because the court grants Pella’s motion on other grounds, the court need not decide whether the theory underlying the SGH Experts’ observation-focused methodology is reliable. The court simply points out that even if the concerns expressed above were resolved, it would not end the inquiry.

SGH Experts' conclusions would stand after so much of their evidentiary foundation was removed.

IV. CONCLUSION

For the foregoing reasons, the court **GRANTS** Pella's motion to exclude.

AND IT IS SO ORDERED.



DAVID C. NORTON
UNITED STATES DISTRICT JUDGE

December 12, 2016
Charleston, South Carolina